



## ABSTRACT

The invention relates to cobalamin derivatives having no or low binding affinity to the transport protein transcobalamin II (TCII) and retaining activity as a vitamin B12 substitute, optionally carrying a therapeutic and/or diagnostic agent, such as a radioactive metal. These compounds have a much reduced accumulation rate in blood and benign organs, such as kidney and liver, compared to the accumulation rate in neoplastic tissues, and are more rapidly eliminated from blood. The invention further relates to a method of diagnosis and a method of treatment of a neoplastic disease or an infection by microorganisms in a mammal by exposing the mammal to a period of a vitamin B12 free diet, and subsequently applying a cobalamin derivative of the invention carrying a diagnostic and/or therapeutic agent. By selecting cobalamin derivatives acting as vitamin B12 substitutes, the risk of the formation of resistant off-spring in neoplastic tissue is much reduced.